Finding this singular focus on theory misguided, a number of philosophers have proposed alternative accounts that are more multifaceted and naturalistic. Best known is Kuhn's (1962/1970) notion of a *paradigm* and distinction between *normal science* and times of *paradigm shift*. In its more restricted sense, a paradigm for Kuhn was an exemplar – a solution to a particular problem that became a model for solving other problems. In its more extended sense, a paradigm was a general theory or theory schema that characterized a domain, identified problems to be solved, and specified strategies for solving them and criteria for evaluating proposed solutions. Kuhn's notion of a paradigm (both the restricted sense of an exemplar but especially the extended sense of a general theory) provided a way to characterize a group of scientists engaged in a similar enterprise and to tell a historical narrative of how the enterprise developed.[3] The extended notion of a paradigm was sufficiently vague, however, that it also became the focus of severe criticism and has largely ceased to figure in philosophical accounts of science.

Adopting the term *field* rather than discipline, Lindley Darden and Nancy Maull advanced a multifaceted conception in which no single element dominated (though it did not extend so far as to include externalist elements). Incorporating Shapere's notion of a domain, they defined a *field* as consisting of the following elements:

> a central problem, a domain consisting of items taken to be facts related to that problem, general explanatory facts and goals providing expectations as to how the problem is to be solved, techniques and methods, and sometimes, but not always, concepts, laws and theories which are related to the problem and which attempt to realize the explanatory goals. (Darden and Maull, 1977, p. 144)[4]

Especially relevant here are the explanatory goals, types of accounts offered (e.g., laws or theories), and conceptualization of the central problem, a cluster that I will call, for convenience, the field's *mission*. As I noted in Section 1, in many areas of biology explanation takes the form of an account of the mechanism responsible for a phenomenon. The central problem is then the discovery and refinement of this mechanism.

A second important component of fields, to which Darden and Maull drew attention, is its array of techniques and methods for solving problems. These

[3] Kuhn inspired several other attempts to characterize larger-scale units that served to unite the practitioners of a discipline. Two examples were Lakatos' (1970) notion of a research program and Laudan's (1977) notion of a research tradition.

[4] Shapere (1984) largely endorsed Darden and Maull's conception of a field but cautioned that one must be sensitive to the fluidity of fields and to the fact that often different practitioners within a field will not share exactly the same methods.